

Date: Tuesday, 12/5/2006 8:08:32 AM  
 User: Kim Johnston

## Process Sheet

<b>Customer</b> : CU-DAR001 Dart Helicopters Services	<b>Drawing Name</b> : 350/355 AS X-TUBE FWD
<b>Job Number</b> : 29760	
<b>Estimate Number</b> : 12485	
<b>P.O. Number</b> : N/A	<b>Part Number</b> : D350748101
<b>This Issue</b> : 12/5/2006 <b>S.O. No.</b> : N/A	<b>Drawing Number</b> : IIN-D350-748 PG5
<b>Prsht Rev.</b> : NC	<b>Project Number</b> : N/A
<b>First Issue</b> : N/A <b>Type</b> : LANDING GEAR	<b>Drawing Revision</b> : A UNDER REVIEW OK 06.11.05
<b>Previous Run</b> : 29759	<b>Material</b> : N/A
<b>Written By</b> : <u>JA 061205</u>	<b>Due Date</b> : 1/30/2007 <b>Qty:</b> 1 <b>Um:</b> Each
<b>Checked &amp; Approved By</b> : <u>JA 061205</u>	
<b>Comment</b> : Est Rev: A New Issue 06-07-05 JLM Est Rev: B Update qty of MS21042L5 06-09-12 KJ	

## Additional Product

Job Number:



<b>Seq. #:</b>	<b>Machine Or Operation:</b>	<b>Description :</b>
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1.0	DC	DOCUMENT CONTROL
-----	----	------------------



KS 07.01.18 (1)

Comment: Photocopy bluefile &amp; type labels per PPPD350-748-101

CHG001

✓ 06/09/04 x1

2.0	29760A	X-TUBE AS 350/355 HI FWD
-----	--------	--------------------------



Comment: Sub-Component X-TUBE AS 350/355 HI FWD  
 D350-748-141 B 29760A

3.0	PACKAGING 1	PACKAGING RESOURCE #1
-----	-------------	-----------------------



Comment: PACKAGING RESOURCE #1  
 Pick Packing Kit

4.0	D35001	350 SADDLE
-----	--------	------------



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)  
 350 SADDLE  
 Batch: 1328477 ✓

5.0	D35011	BUSHING
-----	--------	---------



Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s)  
 BUSHING  
 Batch: 1328795 ✓

07/4/3 SP

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: /  
User:

Tuesday, 12/5/2006 8:08:33 AM  
Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE FWD

Job Number: 29760

Part Number: D350748101

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

AN46A

Bolt



Comment: Qty.: 16.0000 Each(s)/Unit Total: 16.0000 Each(s)

Bolt

Batch: M102115

X

7.0

AN441A

bolt



Comment: Qty.: 8.0000 Each(s)/Unit Total: 8.0000 Each(s)

bolt

Batch: M101538

✓

8.0

AN532A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)

Bolt

Batch: M103338

✓

9.0

AN960JD416

Washer



Comment: Qty.: 32.0000 Each(s)/Unit Total: 32.0000 Each(s)

Washer

Batch: M102929

X

10.0

AN960JD516

Washer



Comment: Qty.: 8.0000 Each(s)/Unit Total: 8.0000 Each(s)

Washer

Batch: M102519

✓

11.0

MS21042L4

Nut



Comment: Qty.: 24.0000 Each(s)/Unit Total: 24.0000 Each(s)

Nut

Batch: M103914

✓

12.0

MS21042L5

Nut



Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)

Nut

Batch: M100564

✓

08/04/3

59

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA: LP Date: 07/04/05  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Tuesday, 12/5/2006 8:08:33 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE FWD

Job Number: 29760

Part Number: D350748101

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

C207/04/04 (1) P27/4/4 (1)

14.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D350-748-101

Location:

PPP Rev:

DRAFT

P27/4/5 (1)

SP

15.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

P207/04/05 (1)

Job Completion



Q 5704.05

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

3.10 Apply a continuous bead of Sikaflex-241/-291 or Proseal 890 or MIL-S-8802 Class B2 sealant in the following locations as per Figure 6:

- A) Along saddle/crosstube interface.
- B) Between the saddle flanges.
- C) Along saddle/skidtube interface.

#### 4.0 WEIGHT AND BALANCE

The following weight and balance information is for Dart crosstube installations only. This data should be similar to the existing installation. Differences from the parts removed are the responsibility of the installer.

DART CROSSTUBE	FWD/AFT	WEIGHT	STA	MOMENT
D350-748-101	Fwd	35.2 lb (16.0 kg)	106.3 in (2.70 m)	3742 lb-in (43.2 kg-m)
D350-748-201	Aft	34.7 lb (15.7 kg)	162.4 in (4.12 m)	5635 lb-in (64.7 kg-m)

#### 5.0 PARTS LIST

Qty -101	Qty -201	Part Number	Description
X		D350-748-101	CROSSTUBE INSTALLATION, AS 350/355 HIGH FWD
	X	D350-748-201	CROSSTUBE INSTALLATION, AS 350/355 HIGH AFT
1		D350-748-141	CROSSTUBE ASSEMBLY, AS 350/355 HIGH FWD
	1	D350-748-241	CROSSTUBE ASSEMBLY, AS 350/355 HIGH AFT
*2	*2	D3502-1	SUPPORT
*2	*2	D2856-400-710	ABRASION STRIP
*1	*1	AELS-1032-225	INSERT
*2	*2	MS21920-20	CLAMP
*1	*1	MS27039-1-10	SCREW
*1	*1	AN960JD10	WASHER
4	4	D3500-1	SADDLE
16	16	D3501-1	BUSHING
16	16	AN4-6A	BOLT
8	8	AN4-41A	BOLT
4	4	AN5-32A	BOLT
32	32	AN960JD416	WASHER
8	8	AN960JD516	WASHER
24	24	MS21042L4	NUT (OR MS21042-4)
4	4	MS21042L5	NUT (OR MS21042-5)

\* REFERENCE ONLY. PARTS ARE INCLUDED IN D350-748-141/241 ASSEMBLIES ABOVE

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 29760

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Revision: A

Date: 06.05.08

Date: Tuesday, 12/5/2006 8:08:47 AM  
 User: Kim Johnston

## Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : X-TUBE AS 350/355 HI FWD  
 Job Number : 29760A  
 Estimate Number : 12484  
 P.O. Number : N/A Part Number : D350748141  
 This Issue : 12/5/2006 S.O. No. : N/A Drawing Number : D350-748-141  
 Prsht Rev. : NC Project Number : N/A  
 First Issue : N/A Type : LANDING GEAR Drawing Revision : UNDER REVIEW  
 Previous Run : 29759A Material : N/A  
 Due Date : 1/30/2007 Qty: 1 Um: Each  
 Written By :  
 Checked & Approved By :  
 Comment : Est Rev: A New Issue 06-07-05 JLM  
 Est Rev: B Update cadplate process 06-09-12 KJ

## Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 DC DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Photocopy bluefile and create labels as per PPP D350-748-141 CHG001

2.0 D6017115 Crosstube Material



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Crosstube Material

D6017-115

2.339" OD X 2.000" ID

Batch: B27471

MS 06/12/5

3.0 MORI SEIKI MORI SEIKI CNC LATHE LARGE



Comment: MORI SEIKI CNC LATHE LARGE

1-Fill tube with sand &amp; install plugs on both ends as per Folio FA648

2-Turn first side as per Folio FA648

3-Deburr &amp; Inspect for surface damage. Repair damage within limits as per Dwg D350-748-141. MS 06/12/5

4.0 QC1 INSPECT ALL DIM TO DIM SHEET



Comment: INSPECT ALL DIM TO DIM SHEET

MS 06/12/6



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Tuesday, 12/5/2006 8:08:47 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE AS 350/355 HI FWD

Job Number: 29760A

Part Number: D350748141

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

MORI SEIKI

MORI SEIKI CNC LATHE LARGE



Comment: MORI SEIKI CNC LATHE LARGE

1-Turn second side as per Folio FA648

2-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D350-748-141.

3-Scribe Part & Batch as per Dwg D350-748-141

M8 06/12/16 1

6.0

QC1

INSPECT ALL DIM TO DIM SHEET



Comment: INSPECT ALL DIM TO DIM SHEET

M8 06/12/16 1

7.0

QC8

SECOND CHECK



Comment: SECOND CHECK

B6 06.12.13 1

8.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

Remove all Machinig Marks

Pmc/JN 06/12/13 ①

9.0

OUTSIDE SERVICE

OUTSIDE SERVICES



Comment: Sub-Contracting OUTSIDE SERVICES

Issue P/O: 2725

Heat Treat to min 180 KSI As per Dwg D350-748-141

Sand Blast tube after Heat Treat

Possibe Supplier: Vac Aero

Ensure Certificate of Conformity is attached

C 206/12/15 ①

10.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Receive & Inspect For Transit Damage

Ensure certificate of conformaty is attached

P 27/1/17

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE AS 350/355 HI FWD

Job Number: 29760A

Part Number: D350748141

Job Number:



Seq. #:

Machine Or Operation:

Description :

11.0

QC6

DIMENSIONAL CHECK



Comment: DIMENSIONAL CHECK

07/04/39

12.0

BENDING

BENDING MACHINE



Comment: BENDING MACHINE

Bend tube as per Dwg D350-748-141 using CNC bender program D350F and Folio FT

DP 7-1-30

13.0

QCS  
Q45

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

20702-01 ①

PC

14.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Drill Tube as per Dwg D350-748-141 Using DT8876 Drill Jigs.  
Set-up drill table as per QSI 010

~~21 07-02-19~~ 21 07-02-20

PTOP

2-Deburr

~~21 07-02-19~~ 21 07-02-20

3-Engrave Part # and Batch # as per Dwg D350-748-141

21 07-02-20

4-Remove all marks from tube within limits of D350-748-141

DP 7-2-23

5- Apply a light coat of LPS3 on the interior of tube

Batch: M1033 45

56 7-2-26

15.0

QC6

DIMENSIONAL CHECK



Comment: DIMENSIONAL CHECK

20702-26

16.0

OUTSIDE SERVICE

OUTSIDE SERVICES



Comment: Sub-Contracting OUTSIDE SERVICES

Issue P/O: 3206

Stress relief at 375° for 5 hours

Magnetic Particle Inspect per ASTM E1444

Cadium Plate per QQ-P-416F, Class 1, Type 2

Embrittle relief at 375° for 8 hours, Chromate Treat

Possible Supplier: Southwest United Industries

Ensure Certificate of Conformity is attached

C207102128 ①

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	
070201	13.0	QCIS req'd. Perm. Change <i>[Signature]</i>				<i>[Signature]</i> 070201	<i>[Signature]</i> 070201	
070201	14.0	QCIS needed after 14.0. Perm. Change <i>[Signature]</i>				<i>[Signature]</i> 070201	<i>[Signature]</i> 070201	
		QCIS inspect work to current step.	<i>[Signature]</i>	070226	0	<i>[Signature]</i> 070201	<i>[Signature]</i> 070201	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Tuesday, 12/5/2006 8:08:47 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE AS 350/355 HI FWD

Job Number: 29760A

Part Number: D350748141

Job Number:



Seq. #:

Machine Or Operation:

Description :

17.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Receive & Inspect For Transit Damage

Ensure certificate of conformity is attached

12/3/28 (1)

18.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

Job 280

19.0

SPRAY PAINTING

SPRAY PAINTING



Comment: SPRAY PAINTING

1-Prime inside crosstube as per QSI 005 4.2

FC

07/04/02

(1)

2-Prime Outside of Tube as per Dart QSI 005 4.2

ml 07 04 03

(1)

20.0

QC14

Inspect Spray Paint



Comment: Inspect Spray Paint

Then, Wrap in plastic bag to protect from scratches

ST 07-0404

21.0

D35021

SUPPORT



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

SUPPORT

Batch: 28476

ST 07-04-09

22.0

D2856400

Abrasion Strip



Comment: Qty.: 1.2401 f(s)/Unit Total: 1.2401 f(s)

Abrasion Strip 7.10" long x2

Batch: 29850

ST 07-04-05

23.0

ALS41032225

Insert



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Insert

Batch: 19393

ST 07-04-05

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Tuesday, 12/5/2006 8:08:48 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE AS 350/355 HI FWD

Job Number: 29760A

Part Number: D350748141

Job Number:



Seq. #:

Machine Or Operation:

Description :

24.0

AN960JD10

Washer



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Washer

Batch: 103641

RT 07-04-05

25.0

MS2192020

Clamp (per MIL-DTL-8783C)



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

Clamp (per MIL-DTL-8783C)

Batch: 102440

RT 07-04-05

26.0

MS27039110

Screw



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Screw

Batch: 18836

RT 07-04-05

27.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Install Ground wire Insert, then insert screw and washer

2-Install Abrasion strips as per Dwg D350-748-141 & QSI 035.

3-Install supports Using Dt8876 as per Dwg D350-748-141, Torque to 60-80 IN-LBS

RT 07-04-05

28.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

12/07/04/0510

29.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D350-748-241

Location:

PPP Rev:

PPP

B329760

12/7/4/5



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☐ No ☒ DQA: ☒ Date: 07/04/05

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE AS 350/355 HI FWD

Job Number: 29760A

Part Number: D350748141

Job Number:



Seq. #:

Machine Or Operation:

Description :

30.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

2 07/04/05 (1)

Job Completion



U of M-C5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

<b>DART AEROSPACE LTD</b>	<b>Work Order:</b>	<b>29760A</b>
<b>Description:</b> Crosstube Assembly (AS350/355 High Fwd)	<b>Part Number:</b>	<b>D350-748-141</b>
<b>Inspection Dwg:</b> D350-748-141 <b>Rev:</b> <i>2 D 06.12.05</i>		<b>Page 1 of 1</b>

### FIRST ARTICLE INSPECTION CHECKLIST

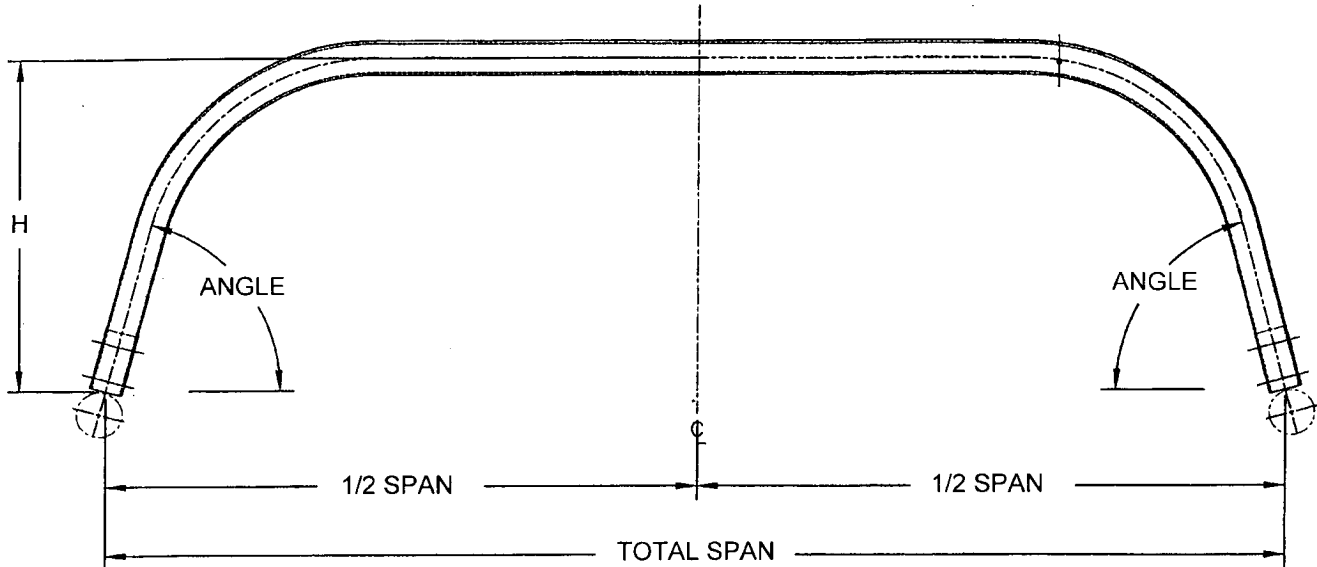
☒ **First Article**
☐ **Prototype**

Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
<b>SIDE A</b>	2.240	+0.005/-0.000	2.242	✓		
	2.180	+0.005/-0.000	2.183	✓		
	2.180	+0.005/-0.000	2.183	✓		
	2.237	+0.005/-0.000	2.241	✓		
	2.272	+0.005/-0.000	2.274	✓		
	2.306	+0.005/-0.000	2.309	✓		
	2.339	+0.005/-0.000	2.340	✓		
	2.339	+0.005/-0.000	2.340	✓		
	0.062	+/-0.010	0.062	✓		
	4.26	+/-0.030	4.26	✓		
	R0.063	+/-0.010	0.063	✓		
	R0.50	+/-0.030	0.50	✓		
<b>SIDE B</b>	2.240	+0.005/-0.000	2.244	✓		
	2.180	+0.005/-0.000	2.184	✓		
	2.180	+0.005/-0.000	2.184	✓		
	2.237	+0.005/-0.000	2.241	✓		
	2.272	+0.005/-0.000	2.276	✓		
	2.306	+0.005/-0.000	2.310	✓		
	2.339	+0.005/-0.000	2.340	✓		
	2.339	+0.005/-0.000	2.340	✓		
	0.062	+/-0.010	0.062	✓		
	4.26	+/-0.030	4.26	✓		
	R0.063	+/-0.010	0.063	✓		
	R0.50	+/-0.030	0.50	✓		
	110.27	+/-0.060	110.27	✓		

<b>Measured by:</b>	<b>M8</b>	<b>Audited by:</b>	<b>BC</b>	<b>Prototype Approval:</b>	N/A
<b>Date:</b>	<b>06/12/13</b>	<b>Date:</b>	<b>06.12.13</b>	<b>Date:</b>	N/A

Rev	Date	Change	Revised by	Approved
A	06.11.09	New Issue (P/O D350-748-101)	KJ/JLM	<i>[Signature]</i>

## Crosstube Bend Dimension Sheet



PART NUMBER: \_\_\_\_\_

BATCH NUMBER: 29760A

DRAWING: \_\_\_\_\_ REVISION: \_\_\_\_\_

H: \_\_\_\_\_

1/2 SPAN: \_\_\_\_\_

TOTAL SPAN: \_\_\_\_\_

ANGLE: \_\_\_\_\_

QC 15: \_\_\_\_\_

DATE: \_\_\_\_\_

QTY: \_\_\_\_\_

**DART****RELEASED**

06.10.31

DESIGN <i>qp</i>	DRAWN BY <i>qp</i>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>///</i>	APPROVED <i>///</i>	DRAWING NO. D350-748-141	REV. D SHEET 1 OF 3
DATE 06.10.31		TITLE CROSSTUBE (AS 350/355 HI FWD) NTS	
A	06.03.31	NEW ISSUE	
B	06.06.30	ADD D6017-115 & PRIME AND PAINT	
C	06.08.14	ADD CAD PLATING	
D	06.10.31	MAG. PARTICLE AND CAD PLATE AS MFD.	

QTY	P/N	DESCRIPTION
X	D350-748-141	CROSSTUBE ASSEMBLY (AS 350/355 HI FWD)
1	D6017-115	CROSSTUBE (OR D6015-125)
2	D3502-1	SUPPORT
2	D2856-400-710	ABRASION STRIP
1	AELS-1032-225	INSERT
1	AN960JD10	WASHER
2	MS21920-20	CLAMP (PER DART SPEC. M-MS21920-20)
1	MS27039-1-10	SCREW

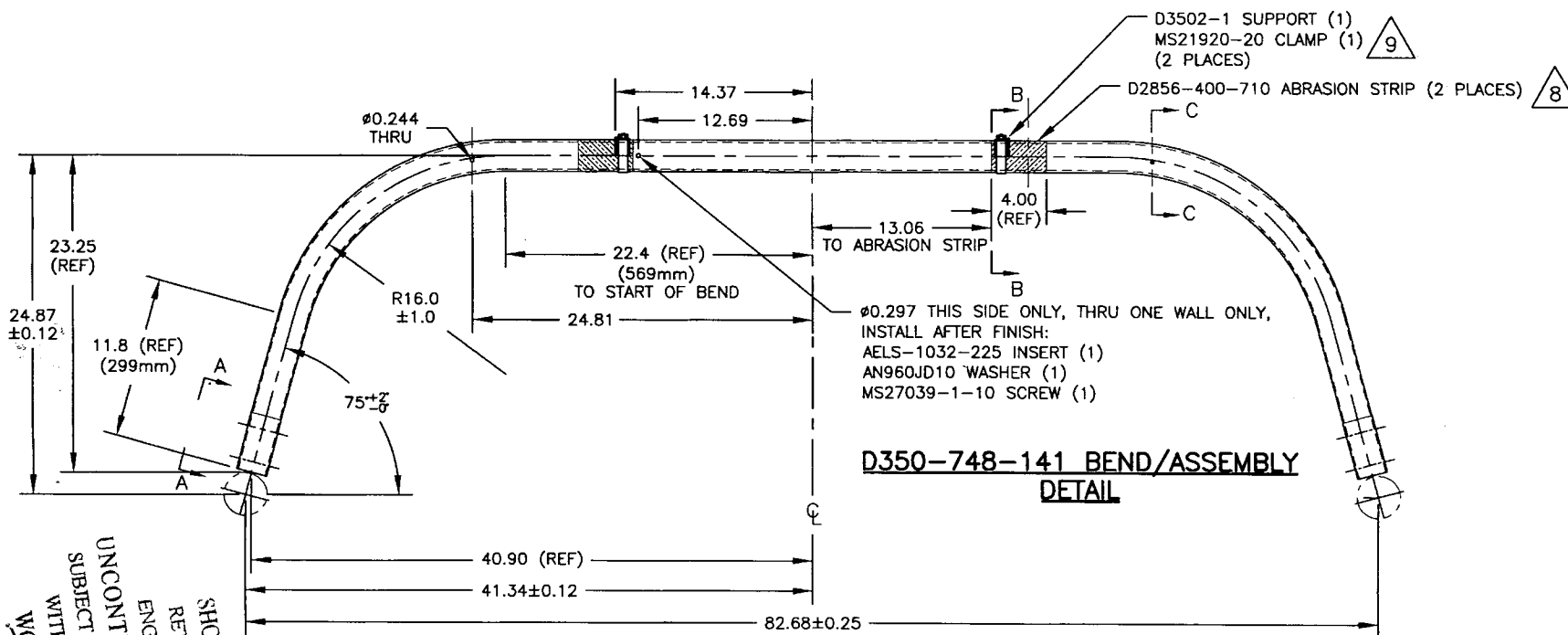
**D350-748-141 CROSSTUBE:**

- 1) MATERIAL: MANUFACTURED FROM D6017-115 OR D6015-125  
FINISHED LENGTH = 110.27±0.06
- 2) MACHINE PER MACHINING DETAIL ON PAGE 3. BLEND OUT ALL EDGES FROM MACHINING LONGITUDINALLY, TRANSITIONS SHOULD BE SMOOTH. NOTE: ALL HOLES ARE DRILLED AFTER BENDING.
- 3) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS.
- 4) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 5) HEAT TREAT TO MIN. 180 KSI PER MIL-T-6736 OR AMS 2759-1C AFTER TURNING
- 6) FINISH: MAGNETIC PARTICLE INSPECT PER DART QSI 038 4.2  
CADMIUM PLATE PER AMS-QQ-P-416B, CLASS 1, TYPE II  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- 7) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO CRACKING/CHIPPING/GROOVES.
- 8) INSTALL D2856-400-710 ABRASION STRIP WITH A GAP ON BOTTOM SIDE OF CROSSTUBE CENTERED OPPOSITE D3502-1 SUPPORT, PER QSI 035.
- 9) TORQUE MS21920-20 CLAMPS 60 TO 80 IN-LB
- 10) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 11) ALL DIMENSIONS ARE IN INCHES
- 12) PART IS SYMMETRIC ABOUT CENTERLINE EXCEPT FOR Ø0.297 HOLE.

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WITHOUT NOTICE  
WORK ORDER  
NO. 29760 A

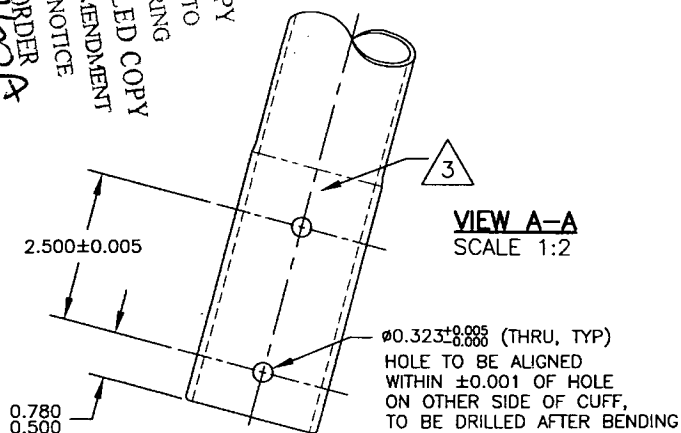
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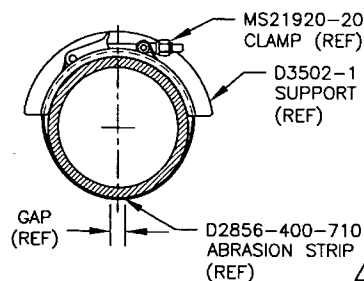


**D350-748-141 BEND/ASSEMBLY  
DETAIL**

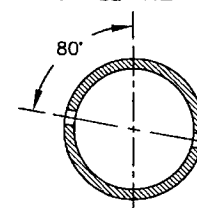
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**SECTION B-B  
SCALE 1:2**



**SECTION C-C  
SCALE 1:2**



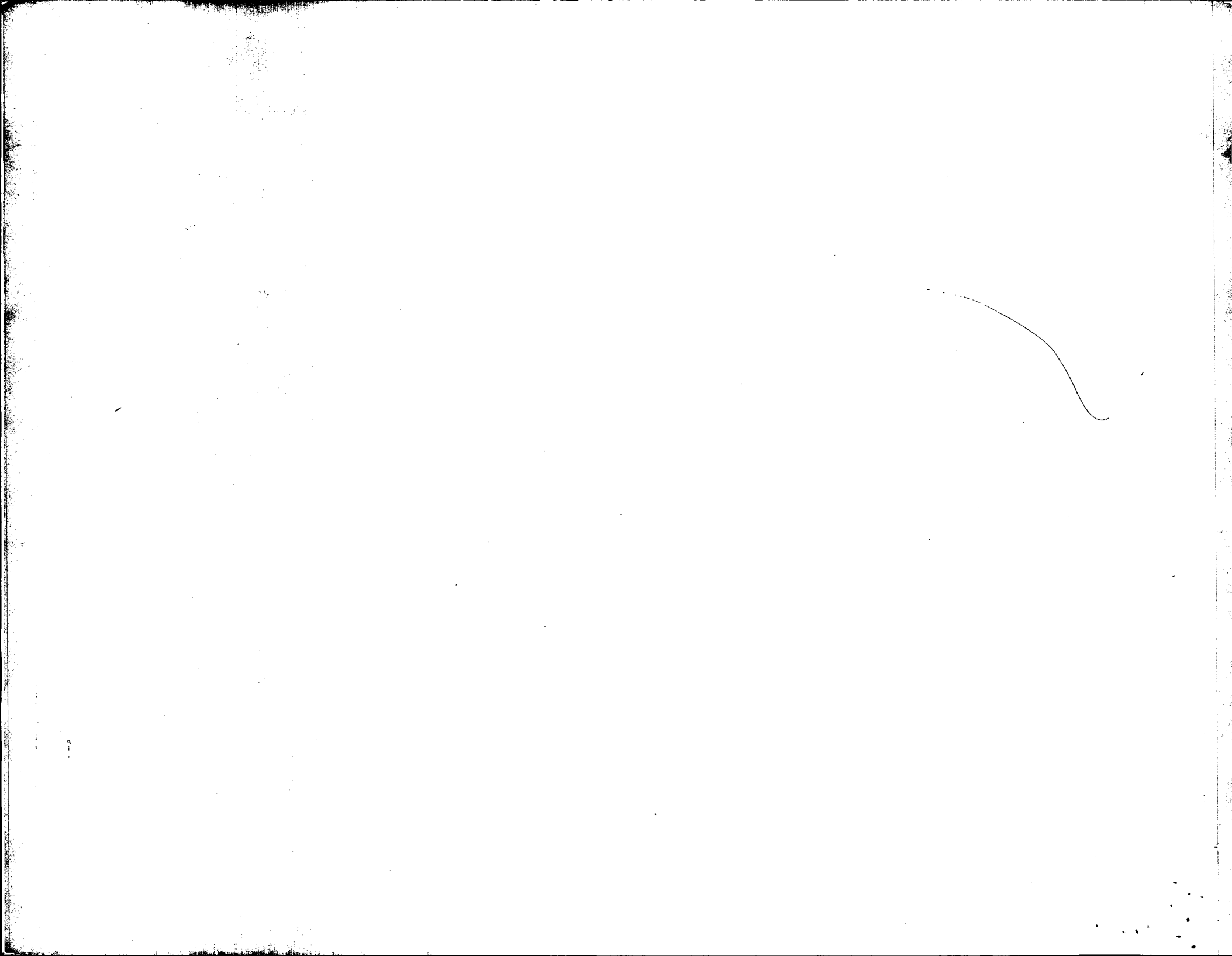
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06.10.31

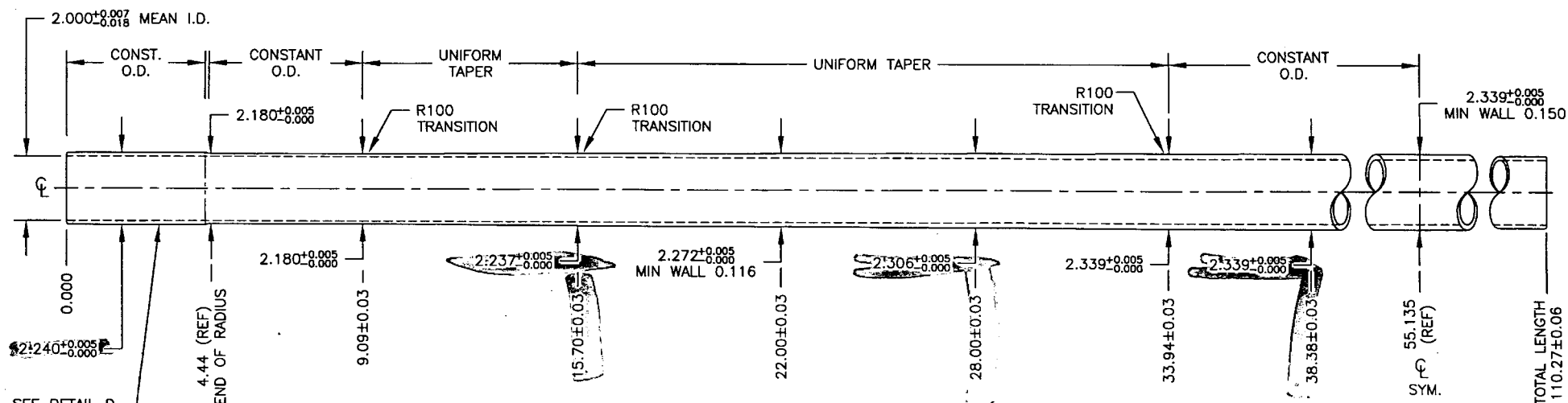
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DART AEROSPACE LTD.

DESIGN	DRAWN BY	<b>DART</b>	DART AEROSPACE LTD. HAMMERSLEY, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO.	REV. D
DATE	TITLE	D350-748-141	SHEET 2 OF 3
06.10.31	CROSSTUBE (AS 350/355 HI FWD)	SCALE	1:8

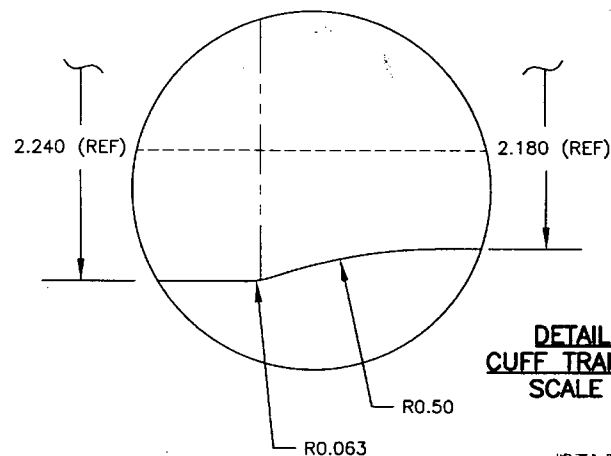
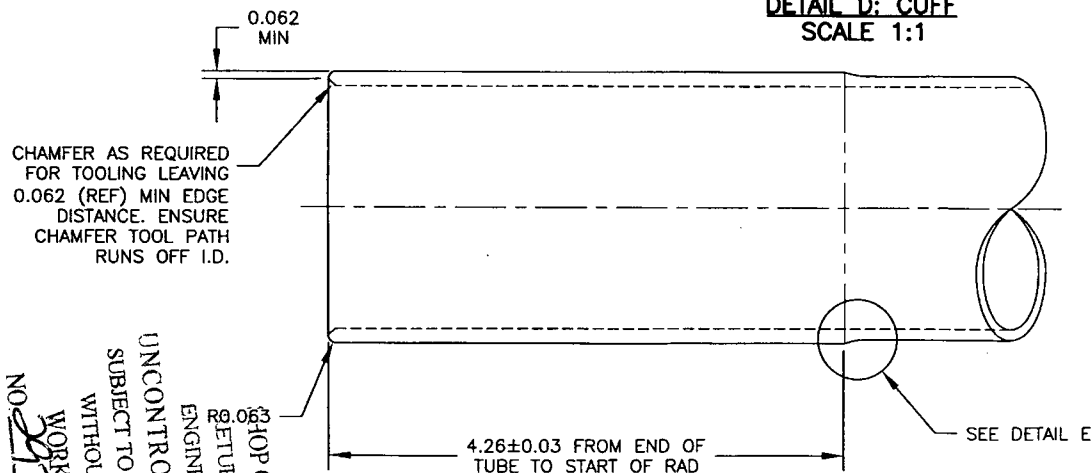






**D350-748-141 MACHINING DETAIL**

**DETAIL D: CUFF  
SCALE 1:1**



**DETAIL E:  
CUFF TRANSITION  
SCALE 9:1**

RELEASED

06.10.31

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DESIGN 90	DRAWN BY 90	<b>DART</b>	DART AEROSPACE LTD. WARRIMUR, ONTARIO, CANADA
CHECKED #	APPROVED #	DRAWING NO. D350-748-141	REV. D SHEET 3 OF 3
DATE 06.10.31		TITLE CROSSTUBE (AS 350/355 HI FWD)	SCALE 1:3

NO. 29760A  
WORK ORDER  
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**VAC AERO**  
INTERNATIONAL INC.

**RELEASE NO**

GST No. : R105468102

OAK 82647-1



HEAD OFFICE  
1371 SPEERS ROAD, OAKVILLE, ONTARIO  
CANADA L6L 2X5  
TEL: (905) 827-4171 FAX: (905) 827-7489



2009 WYECROFT ROAD, UNIT B  
OAKVILLE, ONTARIO  
CANADA L6L 6J4  
TEL: (905) 827-7377 FAX: (905) 827-1380



QUEBEC DIVISION  
7450 RUE VÉRITÉ STREET, ST. LAURENT, QUÉBEC  
CANADA H4S 1C5  
TEL: (514) 334-4240 FAX: (514) 334-6269

01/11/2007

MM / DD / YYYY

PAGE : 1

1DAR01  
BILL TO: DART AEROSPACE LTD.  
1270 ABERDEEN ST.  
HAWKESBURY, ON

SHIP TO: DART AEROSPACE LTD.  
1270 ABERDEEN ST.  
HAWKESBURY, ON

K6A 1K7

K6A 1K7

DATE SHIPPED	SHIP VIA	F.O.B.
01/11/2007	EPIC EXPRESS	ORIGIN
CUSTOMER P/O No.	JOB No.	TERMS
PO00002725		COD

PART No.	DESCRIPTION	UOM	QTY ORD	QTY SHPD	TEST RESULTS
D350-CROSS TUBES D350-748-141/-241		EA	8	8	
<p>Process Specifications: Procedure: 4353 HEAT TREATED TO 180-200 KSI PER AMS 2759-1C 100% HARDNESS TESTED PER ASTM E-18 HRC 40-43 MATERIAL: 4130</p> <p>REF. PS# 59054 RE: B29758A, B29757A, B29760A, B29765A, B29761A, B29764A, B29763A, B29762A</p>					

**100% HARDNESS TESTED**  
8 pcs.

42/43 HRC

*[Signature]*



*[Signature]*  
07/01/29

I hereby certify that the material covered by this release note has been inspected and tested and conforms to all specifications relevant thereto in accordance with the conditions of the contract / or purchase order.

ON BEHALF OF VAC AERO INTERNATIONAL INC



*[Signature]*  
Authorized Q.C. Inspector



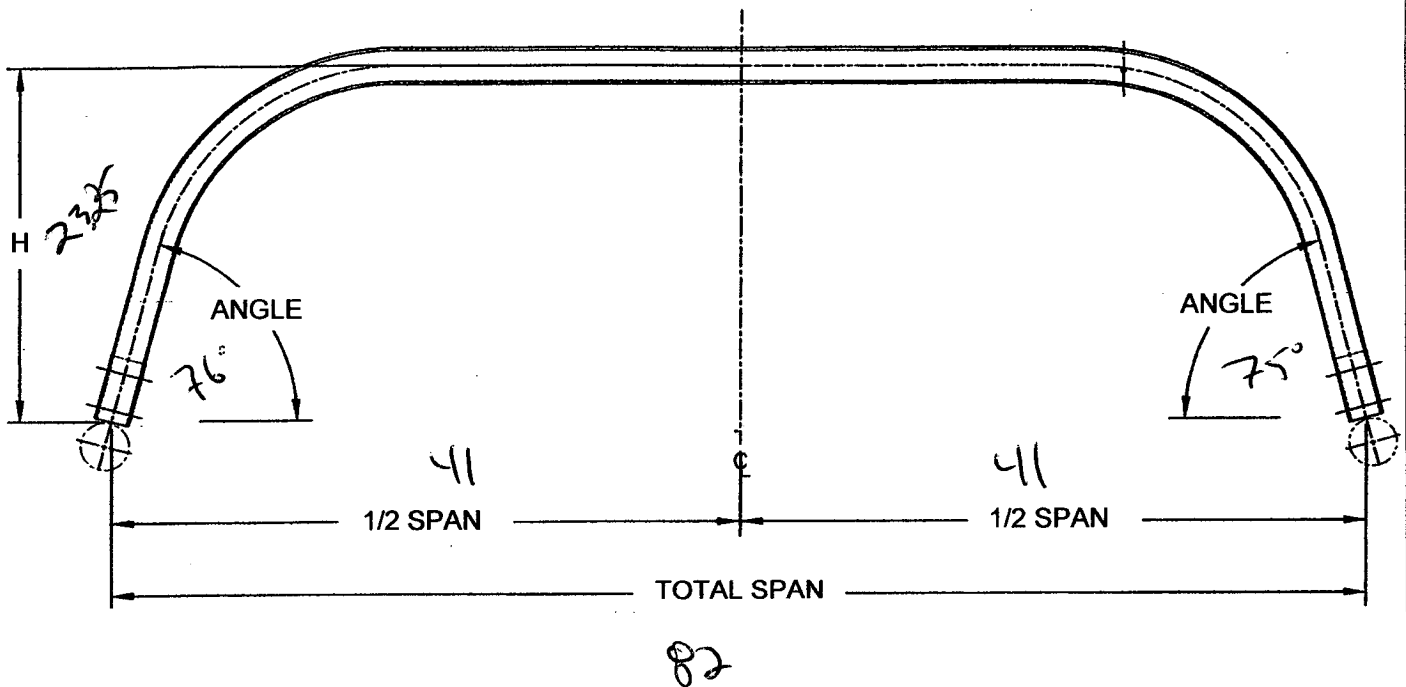
VACUUM BRAZING · HEAT TREATING · SPECIAL PROCESSING · FURNACE EQUIPMENT  
TURBINE COMPONENT OVERHAUL · PLASMA AND OTHER COATINGS



HEAT  
TREATING



# Crosstube Bend Dimension Sheet



PART NUMBER: D350-748-141

BATCH NUMBER: 29760

DRAWING: -141 REVISION: C

H: 23.25

1/2 SPAN: 40.9 ±.120

TOTAL SPAN: 81.8

ANGLE: 75<sup>+2</sup><sub>-0</sub>

*Cuff cut  
to Dwg*

QC 15: 2

DATE: 07-02-07

QTY: 1



# Southwest United Industries, Inc.

SOUTHWEST UNITED INDUSTRIES, INC.  
422 S. St. Louis Tulsa, OK 74120

Page 1 of

## PACKING LIST

DART AEROSPACE LTD  
1270 ABERDEEN STREET  
HAWKESBURY, ON K6A 1K7  
CANADA

Ship ID: 18869  
Ship Date: 03/26/2007  
Terms: C.O.D.

Certification #: 23920

Certification Date:

1 D350-748-141  
CROSSTUBE

Ref-No: B28459

Job-No: 48090

P/O #: PO00003206

1 D350-748-141  
CROSSTUBE

Ref-No: B29757

Job-No: 48329

P/O #: PO00003206

1 D350-748-141  
CROSSTUBE

Ref-No: B28773

Job-No: 48330

P/O #: PO00003206

1 D350-748-141  
CROSSTUBE

Ref-No: B29760

Job-No: 48331

P/O #: PO00003206

1 D350-748-141  
CROSSTUBE

Ref-No: B28776

Job-No: 48332

P/O #: PO00003206

1 D350-748-141  
CROSSTUBE

Ref-No: B28775

Job-No: 48333

P/O #: PO00003206

1 D350-748-141  
CROSSTUBE

Ref-No: B28774

Job-No: 48334

P/O #: PO00003206

# OF JOBS ON 23920:

7

SHIPPED QTY FOR 23920:

7

Tracking #: SCX K  
Ship Via: OTHERS

FAA Repair Station CN2R748K

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# Southwest United Industries, Inc.

SOUTHWEST UNITED INDUSTRIES, INC.  
422 S. St. Louis Tulsa, OK 74120

Page 1 of 2

## CERTIFICATION

DART AEROSPACE LTD

Certification #: 23920

Certification Date: 03/26/2007

Qty	Part Number/Description	Job-No/Order-No/Clt-No
1	D350-748-141 CROSSTUBE	48090 PO00003206 B28459
1	D350-748-141 CROSSTUBE	48329 PO00003206 B29757
1	D350-748-141 CROSSTUBE	48330 PO00003206 B28773
1	D350-748-141 CROSSTUBE	48331 PO00003206 B29760
1	D350-748-141 CROSSTUBE	48332 PO00003206 B28776
1	D350-748-141 CROSSTUBE	48333 PO00003206 B28775
1	D350-748-141 CROSSTUBE	48334 PO00003206 B28774

1. Stress relieve at 350-400F for 4 hours minimum
2. Cadmium plate per AMS-QQ-P-416B, Type II, Class 1 (QQ-P-416, Type II, Class 1)
3. Embrittlement relieve within 4 hours of plating at 350-400F for 8 hours minimum
4. Magnetic particle inspect per ASTM E 1444-05. No linear indications/cracks allowed.

Qty Ins: 7    Qty Rej: 0    Qty Acc: 7

5. Inspect

FAA Repair Station CN2R748K

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## Southwest United Industries, Inc.

SOUTHWEST UNITED INDUSTRIES, INC.  
422 S. St. Louis Tulsa, OK 74120

Page 2 of 2

### CERTIFICATION

We certify that the parts listed above have been processed in accordance with the requirements and specifications of the above referenced purchase order. Documentation is on file and available for review.

Certification By: 

FAIN, MARK



FAA Repair Station CN2R748K

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